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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,453	09/28/2004	Jeroen Arnoldus Leonardus Johannes Raaymakers	NL 020233	2235

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BRIARCLIFF MANOR, NY 10510

EXAMINER

GUPTA, PARUL H

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/509,453	Applicant(s) RAAYMAKERS, JEROEN ARNOLDUS LEONARDUS J	
	Examiner Parul Gupta	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-12 are pending for examination as interpreted by the examiner, based on the amendment filed on 5/1/06.

Response to Arguments

2. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Park et al., US Patent 6,714,496.

Regarding claim 1, Park et al. teaches a tilt control device for controlling a radial tilt of a recording surface of an optical disc with respect to an optical recording/reproducing beam (see abstract), said tilt control device comprising: control means for generating two focus controlling outputs (FET1 and FET2); and actuating means (function performed by element 30 of figure 5) for controlling a focusing state and the radial tilt of the optical recording/reproducing beam based on said two focus controlling outputs, characterized in that said control means determines a radial tilt value based on a differentiation of focus control values obtained at different radii (ascending and descending are read as different positions, of different radii, of the disk) of said optical disk (FET).

Regarding claim 9, Park et al. teaches an optical disc player comprising a tilt control device as claimed in claim 1 (shown in figure 5).

Regarding claim 10, Park et al. teaches a tilt control method for controlling a radial tilt of a recording surface of an optical disc with respect to an optical recording/reproducing beam, said tilt control method comprising the steps of: generating a focus controlling output and a tilt controlling output (FET1 and FET2 from element S20 of figure 1); and controlling a focusing state of the optical recording/reproducing beam and the radial tilt based on said focus and tilt controlling outputs (column 2, lines 9-35), characterized in that said method further comprises the step of: determining a radial tilt value based on a differentiation of focus control values (FET1 and FET2) obtained at different radii (ascending and descending are read as different positions, of different radii, of the disk) of said optical disk (column 2, lines 9-35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Morimoto, US Patent 6,266,301.

Regarding claim 3, Park et al. teaches the device as claimed in claim 1 but does not teach the further limitations of claim 3 of PID controller outputs.

Morimoto teaches a device characterized in that said focus controlling outputs are Proportional Integral Derivative PID controller outputs (shown in figure 10 and explained in column 7, lines 15-22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of PID controller outputs as taught by Morimoto into the system of Kondo et al. This would serve the purpose of lowering costs (column 2, lines 39-41 of Morimoto).

5. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Nagasato, US Patent 6,181,670.

Regarding claim ^{2 and 11}~~8~~, Park et al. teaches the device and method as claimed in claims 1 and 10 but does not teach the further limitations of claims 2 and 11 of a split coil arrangement.

Regarding claim 2, Nagasato teaches in figure 7 the device as claimed in claim 1, characterized in that said actuating means comprises a split focus coil arrangement for providing focus and tilt adjustment (done by elements 112 and 114), and said control means supplies said two focus controlling outputs (currents sent to drive each coil) to respective coils of said split focus coil arrangement.

Regarding claim 11, Nagasato teaches the method as claimed in claim 10, characterized in that said controlling said focusing state step comprises using a split coil arrangement arranged to provide a focus adjustment, said focus and tilt controlling outputs (currents) being supplied to respective coils of said split coil arrangement (column 12, lines 14-26).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of split coil as taught by Nagasato into the system of Park et al. This would serve to provide an objective lens driving device capable of efficiently and quickly correcting the tilt of an objective lens relative to a signal recording surface of an optical disk so that the comatic aberration of a spot formed by a light beam on the signal recording surface of the optical disk is reduced (column 2, lines 55-62 of Nagasato).

6. ^{4, 6, 8, 12}
Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Hajjar et al., US Patent 5,627,808.

Regarding claim ^{4, 6, 8, 12} 6, Park et al. teaches the device and method as claimed in claims 1 and 10 but does not teach the further limitations of claims 2 and 11 of a split coil arrangement.

Regarding claim 4, Hajjar et al. teaches the device as claimed in claim 1, characterized in that said control means ("control actuator") positions a sledge (optical head of element 9 in figure 6 is designed to move to control tracking to serve the same function as the sledge) at at least two different radial positions, controls said actuating means to adjust the focus, and measures said focus control values at said at least two different radial positions (column 3, lines 45-50).

Regarding claim 6, Hajjar et al. teaches the device as claimed in claim 1, characterized in that said control means generates said focus controlling outputs based on measured mean focus control values and corresponding radial steps between two measurements (column 3, line 45 -column 4, line 4). The idea of finding the mean based

on various measurements from different radial positions is given in column 1, lines 43-61. The given section refers to taking measurements at different radial positions to find calibration radii. Then, a signal representative of the focus based on the radius is determined. The concept of finding a representative based on the radial position serves the same purpose as the applicant.

Regarding claim 8, Hajjar et al. teaches the device as claimed in claim 1, wherein said device further comprises a tilt table ("LUT" of column 4, lines 5-21) for storing an information indicating mean disc tilt values and corresponding radial positions in figures 3, 4, and 5.

Regarding claim 12, Hajjar et al. teaches the method as claimed in claim 10, characterized in that said focus controlling step comprises using a mean focus controlling output for tilt control (column 2, lines 25-33). The idea of finding the mean based on various measurements from different radial positions is given in column 1, lines 43-61. The given section refers to taking measurements at different radial positions to find calibration radii. Then, a signal representative of the focus based on the radius is determined. The concept of finding a representative based on the radial position serves the same purpose as the applicant.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of storing a mean value to be used in tilt control as taught by Hajjar et al. into the system of Park et al. This would serve to fully compensate for cross-track tilt that may be present between the media and the optical head (column 1, line 62-column 2, line 4 of Hajjar et al.)

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Hajjar et al. as applied to claim 1 above, and further in view of Motosyuku et al., US Patent 5,602,566.

Hajjar et al. in view of Park et al. teaches all of the limitations of claim 1.

Hajjar et al. in view of Park et al. does not teach the limitations of claim 5.

Motosyuku et al. teaches a device according to claim 1, characterized in that said control means is arranged to set a mean disc tilt value in a tilt register (column 7, lines 32-50). The device taught records the tilt angle value of a processor into a register. This is similar to recording the tilt value of a disc as both inventions relate to fixing errors caused by tilt, although they are for two different devices.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the recording of the mean disc tilt value previously calculated into a tilt register as taught by Motosyuku et al. into the system of Hajjar et al. It is well known in the art that registers are reliable storage means for values that must be used in other calculations.

Allowable Subject Matter

8. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claim is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a mean disc tilt value being obtained based on the equation of the claim that refers to $r_{\beta} = \frac{G_c c_i \Delta r_f}{c_f (a_1 + a_2) \Delta R}$.

The following is a list of the closest prior arts that were noted:

Hajjar et al., US Patent 5,627,808 teaches the equation $Cb = (Vb - Vc)/(Rb - Rc)G1$ at the bottom of column 3. Although the equation is used for the same purpose of determining the tilt signal, Hajjar et al. uses a different method.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
7/13/06



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